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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/838,741	04/19/2001	Dick L. Knox	104-22997	9328

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EXAMINER

LE, DANG D

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 01/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/838,741

Applicant(s)

KNOX ET AL.

Examiner

Dang D Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 November 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-9 and 12-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 12-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 11/27/02 have been fully considered but they are not persuasive. The applicant's argument is on the ground that claim 7 requires first and second pump stages while Erickson shows only a single stage and that although Guardiani et al. show two stages, it is not obvious to combine the two references. It is noted that claims 7-9 are rejected over Carle in view of Guardiani et al., not over Erickson in view of Guardiani et al.

The applicant's argument is also on the ground that Erickson does not provided "a pressure sufficient to induce a film of lubricant between the shaft and the bearing." The Declaration filed 11/27/02 has been considered. However, Erickson does show the passage 11b allowing the lubricant to induce a film of lubricant between the shaft and the bearing. See column 1, lines 30-35 and column 2, lines 15-20.

As a result, the rejection of claims 7-9 and 12-14 is still deemed proper and repeated hereinafter.

2. Applicant's arguments with respect to claims 1-6 and 12-14 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 12 is rejected under 35 U.S.C. 102(b) as being anticipated by Erickson.

Regarding claim 12, Erickson shows the method of operating an electric motor having a shaft and a bearing located within a housing that is adapted to be filled and sealed with lubricant, comprising:

- Mounting at least one centrifugal lubricant pump stage in the housing, the pump stage having an impeller attached to and rotating with the shaft and a mating diffuser for pressurizing the lubricant;
- Supplying power to the motor to cause the shaft and the impeller to rotate; and
- With the pump stage, applying pressure to the lubricating fluid and flowing the lubricant to the bearing at a pressure sufficient to induce a film of lubricant between the shaft and the bearing that prevents the shaft from contacting the bearing (column 2, lines 15-20.)

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erickson in view of McMahan.

Regarding claim 1, Erickson shows that in an electric motor having a shaft and a bearing located within a housing that is adapted to be filled and sealed with lubricant (see Figure), the improvement comprising:

- At least one centrifugal lubricant pump stage (40) located in the housing (10, 10b), the pump stage having an impeller (43) attached to and rotating with the shaft (11) and a mating diffuser (41) for pressurizing the lubricant; and
- A flow passage (11a to 11b) leading from the lubricant pump stage to the bearing (12) for applying sufficient pressure to the lubricant to induce a film of lubricant between the bearing and the shaft (column 2, lines 15-20).

Erickson does not show a plurality of stages. Erickson uses a single stage.

McMahan shows the use of a plurality pump stages (15, 16) for the purpose of reducing cost.

Since Erickson and McMahan are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to increase the number of the pump stages as taught by McMahan for the purpose discussed above.

Regarding claim 2, it is noted that Erickson and McMahan shows all of the limitations of the claimed invention except for pump stages having a combined capacity to produce at least about 30 psi of pressure in the lubricant.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to set the pressure of the lubricant at least about 30 pounds per square inch, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 3, it is noted that Erickson also shows the diffuser having a plurality of passages (24, 28) that extend downstream and inward to a central intake (11a) of one of the impellers.

Regarding claim 4, it is noted that Erickson and McMahan, if combined, would also show the diffuser having a plurality of passages (24, 28) that extend downstream and inward to a central intake (11a) of one of the impellers; and one (40) of the impellers discharging lubricant (through 24) into a chamber (50) in a housing without flowing through the passages of any of the diffusers.

Regarding claim 5, it is noted that Erickson also shows the impeller of the pump stage having substantially radial flow passages.

Regarding claim 6, it is noted that Erickson also shows a chamber located in a lower portion of the housing for containing a volume of lubricant, the chamber being fixed in volume; the shaft being hollow, and the flow passage being within the shaft for communicating fluid from the chamber to the bearing and the pump stage discharging downward.

8. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carle in view of Guardiani et al.

Regarding claim 7, Carle shows an electric submersible pump assembly for a well, the assembly comprising:

- An electrical motor having a shaft (19) and a bearing (58) located within a housing that is adapted to be filled and sealed with lubricant (Figure 3c);
- A chamber (Figure 3c) located in a lower portion of the housing for containing a volume of lubricant;
- A flow passage (40-57) within the shaft leading from the chamber to the bearing;
- A pump exterior of the motor and connected to the shaft for pumping well fluid (column 2, lines 30-35).

Carle does not show first and second centrifugal lubricant pump stages, each pump stage located in the chamber of the housing and each having an impeller

attached to and rotating with the shaft and a mating diffuser for pressurizing the lubricant.

Guardiani et al. show first and second centrifugal lubricant pump stages (67, 69, Figure 2), each pump stage located in the chamber of the housing and each having an impeller attached to and rotating with the shaft and a mating diffuser for pressurizing the lubricant for the purpose of increasing pressure.

Since Carle and Guardianni et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to include first and second centrifugal lubricant pump stages, each pump stage located in the chamber of the housing and each having an impeller attached to and rotating with the shaft and a mating diffuser as taught by Guardianni et al. for the purpose discussed above.

Regarding claim 8, it is noted that Carle and Guardianni et al. also show all of the limitations of the claimed invention except for the first and second pump stages having a combined capacity to produce at least about 30 psi of pressure in the lubricant.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to set the pressure of the lubricant at least about 30 pounds per square inch, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 9, it is noted that Carle also shows the pump stages discharging downward into a lubricant reservoir of fixed volume within the chamber.

9. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Erickson.

Regarding claim 13, Erickson shows all of the limitations of the claimed invention except for the pressure of the lubricant being at least about 30 pounds per square inch.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to set the pressure of the lubricant at least 30 pounds per square inch, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

10. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Erickson in view of McMahan.

Regarding claim 14, Erickson shows all of the limitations of the claimed invention except for mounting a plurality of the pump stages within the housing.

McMahan mounts a plurality of the pump stages within the housing for the purpose of increasing load capacity.

Since Erickson and McMahan are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to mount more than one pump stages within the housing as taught by McMahan for the purpose discussed above.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Information on How to Contact USPTO

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D Le whose telephone number is (703) 305-0156. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone

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numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

DDL
January 11, 2003

nc

Lang Lk